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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,324	12/27/2000	Shigeru Sugaya	450100-02869	6204

20999 7590 12/14/2004

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EXAMINER

SEFCHECK, GREGORY B

ART UNIT	PAPER NUMBER
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2662

DATE MAILED: 12/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/749,324

Applicant(s)

SUGAYA ET AL.

Examiner

Gregory B Sefcheck

Art Unit

2662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to because the margins at the top of the page for Figs. 4A-8C, 10, 12, and 13 are not acceptable. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The disclosure is objected to because of the following informalities:

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- Regarding claims 1, 19, 17, and 25,

The transmission frame format defined in claims 1, 9, 17, and 25 does not clearly identify the transmission relationship between the control station and the plurality of communication stations for each of the various frame sections. Does each station transmit full frames, including downlink and uplink management information? If so, how is the control station designated among the plurality of stations?

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 9, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Murata (US006470004B1).

- In regards to Claims 1, 9, and 17 (as best understood),

Murata discloses a transmission system in a radio network between a controlling base station and a plurality of terminals (Abstract; Fig. 1; claim 1,9,17 – radio transmission method/control station/network for a plurality of stations).

Murata shows that the transceiver of the base station communicates transmission control to the transceivers of the terminals in the network (Fig. 1; Abstract; claim 1 – selecting one of the stations as a control station to control transmission between stations in the network; claim 17 – transmitters at control station and one of stations for sending and receiving signals having the defined frame format).

Referring to Fig. 2, Murata defines a TDMA transmission frame having a fixed access channel 51 (downlink management section), control channels 52 (station sync

channels)s and user data channels 53 (Col. 3-4, lines 62-10; claim 1,9,17 – defining a transmission frame format having a frame period consisting of a management region and an information region; claim 1,17 – management region consists of a fixed length down-link management section and a station sync section).

The section of control channels 52 is used to designate the terminal allocated to a slot number and the number of control channels varies based on the number of terminals (Col. 4, lines 2-10; claim 1,9,17 – sync section for identifying each station and having a variable length corresponding to the number of stations).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-8, 10-16, and 18-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murata in view of son Akerberg (US006061343A).

- In regards to Claims 2, 10, and 18 (as best understood),

Murata discloses a transmission system in a radio network between a controlling base station and a plurality of terminals that discloses all limitations of the parent claims.

Murata discloses user data channels 53 but does not explicitly disclose a first and second information region for transmitting isochronously and asynchronously within the transmission frame.

Son Akerberg discloses a digital radio transmission scheme comprising regions for synchronous and asynchronous traffic (Abstract; Col. 1, lines 25-32; Col. 3, lines 1-4; claim 2,10,18 – information region consists of first information region for transmitting isochronously and second information region for transmitting asynchronously).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the data channels in the system of Murata by defining separate regions for synchronous and asynchronous traffic, as taught by son Akerberg. This modification would enable different traffic types to be communicated from one terminal while maintaining the timing requirements of the differing traffic types.

- In regards to Claims 3-5, 7, 11-13, 15, 19-21, and 23 (as best understood),

Murata discloses a transmission system in a radio network between a controlling base station and a plurality of terminals that discloses all limitations of the parent claims.

Murata does not explicitly show a first information region of a fixed length arranged in relation to a second information region within the frame.

Son Akerberg shows that the asynchronous data portion is determined in relation to the fixed synchronous frames (Fig. 3; Col. 4-5, lines 45-12; claims 3,5,7,11,13,15,19,21,23 – first region has a fixed length).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Murata by fixing the length of the first information region, as shown by son Akerberg. This would ensure bandwidth for synchronous traffic with strict transmission time requirements.

The Applicant shows that various configuration of the respective regions within the frame in relation to each other may be used to address particular considerations of the information being communicated between the stations (Figs. 4A-8C; claim 3,11,19 – first region precedes second information region; claim 4,12,20 – first region follows down-link management region and second region precedes station sync section; claim 5,7,13,15,21,23 – first region follows second region).

It would have been an obvious design choice by one of ordinary skill in the art at the time of the invention to flexibly arrange the management and data sections of the frame disclosed by Murata. The ability to arrange these sections differently within the frame would enable compatibility with various networks and quality of service requirements of the information carried in the frame.

- In regards to Claims 6, 14, and 22 (as best understood),

Murata discloses a transmission system in a radio network between a controlling base station and a plurality of terminals that discloses all limitations of the parent claims.

Murata discloses that the length of the sections of control and data channels is limited by the number of stations in the network (Fig. 2; claim 6,14,22 – length of second region is set to a minimum length that is limited by the number of stations in network).

- In regards to Claims 8, 16, and 24 (as best understood),

Murata discloses a transmission system in a radio network between a controlling base station and a plurality of terminals that discloses all limitations of the parent claims.

Murata discloses that a user requesting connection establishment may be assigned a part of a user channel assigned to another user by not fully utilized (Col. 2, lines 5-23; claim 8,16,24 – information identifying a new station is added to the station sync section).

Allowable Subject Matter

9. Claims 25-32 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

- In regards to Claim 25 (as best understood),

The prior art of record does not teach or fairly suggest a radio transmission network for radio transmission between a control station and a plurality of communication stations, comprising: said control station for controlling said radio

transmission network, comprising: a first controller for defining a transmission frame format having a defined frame period and consisting of a management information transmission region and an information transmission region; wherein said management information transmission region consists of a fixed length down-link management section and a station synchronous section; said station synchronous section for identifying each communication station in the radio network and having a variable length corresponding to the number of communication stations in the radio network; and a first radio transmitter for sending and receiving signals having the defined transmission frame format; and at least one communication station controlled by said control station, comprising: a second radio transmitter for sending and receiving signals having the defined transmission frame format; and a second controller for transmitting a station synchronous signal identifying the communication station and included at a designated position in said station synchronous section.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Gehring et al. (US 20040028071A1) discloses an apparatus and method for managing variable-sized data slots with timestamp counters within a TDMA frame

- Aiello et al. (US 20020018458A1) discloses baseband wireless networks for isochronous communication
- Ho (US006747959B1) discloses voice data integrated multiaccess by self-reservation and blocked binary tree resolution
- Silventoinen et al. (US006594250B1) discloses a method of monitoring base stations with discontinuous control channel transmissions
- Sugita (US006545999B1) discloses a wireless communication method and system, communicating station and controlling station
- Chambers et al. (US006480473B1) discloses verification of active nodes in an open network
- Puckette, IV (US006377565B1) discloses an adaptive propagation delay compensation for TDMA communication systems
- Young et al. (US006331973B1) discloses unifying slot assignment protocol multiple access system
- Fazel et al. (US006275506B1) discloses a radio transmission method for digital multimedia data signals between subscriber stations in a local network
- Kim et al. (US006249515B1) discloses a multiple access control method for guaranteeing QOS requirement
- Kim (US006172971B1) discloses a method for forming frame structure for use in time division multiple access communication system
- Haartsen (US006028853A) discloses a method and arrangement for radio communication

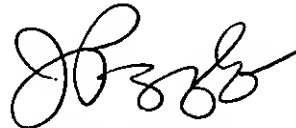
- Xu et al. (US006005854A) discloses a synchronous wireless access protocol method and apparatus
- Bauchot (US005970062A) discloses a method and apparatus for providing wireline access to an ATM network
- Papadopoulos et al. (US005768254A) discloses a multiple access cellular communication with signal cancellation to reduce co-channel interference
- Hamalainen et al. (US005729541A) discloses a system for transmitting packet data radio telephone TDMA systems
- Natarajan et al. (US005274841A) discloses methods for polling mobile users in a multiple cell wireless network
- Wolfe et al. (US004763325) discloses demand assigned reformatting with an overflow area for time division multiple access communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory B Sefcheck whose telephone number is 571-272-3098. The examiner can normally be reached on Monday-Friday, 8:00am-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GBS
12-3-2004



JOHN PEZZLO
PRIMARY EXAMINER